

Having thus described our invention, we now claim:

1. A method of calibrating a document processing system (DPS) comprising steps of:
  - 5 providing a target comprised of a plurality of target elements to the DPS;
  - generating a DPS output from the target, wherein the DPS output includes a plurality of output elements corresponding to the target elements;
  - measuring the DPS output relative to the target for computing a
  - 10 calibrating function for the DPS; and,
  - when the measuring indicates a mismatch between the target elements and the output elements, reordering the measured output elements for matching the measured output elements to the target elements whereby the computing of the calibrating function can be done without having to re-measure the output elements.
  - 15
2. The method as defined in claim 1 wherein the measuring indicating a mismatch is relative to a sequential order of measuring of target elements defined by the measuring step, or relative to a position flipping of the DPS output from the provided target.
- 20
3. The method as defined in claim 1 wherein a predetermined value for the measuring is associated with the target, and the mismatch is indicated when the computing of the calibrating function exceeds a threshold error from the predetermined value.
- 25
4. The method as defined in claim 3 wherein the reordering comprises a confirmation by a DPS operator.
5. The method as defined in claim 4 wherein the confirmation by
- 30 the DPS operator comprises selecting an order for the measuring.
6. The method as defined in claim 5 wherein the selecting is made from a set of alternative visual layouts.

7. The method as defined in claim 3 wherein the reordering comprises determining a minimum error value in the computing of the calibrating function.

5 8. The method as defined in claim 7 wherein the minimum error value is computed from a set of likely orderings of the output elements relative to the target elements.

9. The method as defined in claim 3 wherein the predetermined value associated with the target is computed from a prior calibration of the DPS.

10 10. The method as defined in claim 3 wherein the predetermined value associated with the target is computed from a model for the DPS.

11. The method of claim 1 executed in a xerographic environment.

12. A method for validating an output used in calibrating a document processing system (DPS), comprising the steps of:  
generating a calibration target for assessing a range of outputs of the  
DPS, the target comprising a plurality of target elements and element orientation  
information representing a physical layout of said target elements in a DPS output;  
generating the DPS output in accordance with the calibration target;  
measuring characteristic values corresponding to the individual target  
elements from the DPS output;  
identifying a mis-ordering of the measurements of the target elements  
in the DPS output from a desired order of measurement; and,  
re-ordering the measurement of the target elements of the DPS output  
in accordance with the desired order thereby facilitating use of the measurements  
without requirement of re-measurement.

13. The method as defined in claim 12 wherein the identification is based on determining a difference between a predicted output value corresponding to a target element and a measured output value for the corresponding elements in the DPS output.

14. The method as defined in claim 13 wherein the determining is made visually by an operator of the DPS.

5 15. The method as defined in claim 14 wherein the re-ordering is confirmed visually by the operator.

16. The method as defined in claim 13 wherein the determining comprises a computing of an error value.

10 17. The method as defined in claim 16 wherein the re-ordering is determined so as to minimize the error value.

18. The method as defined in claim 13 wherein the predicted value associated with the target is computed from a prior calibration of the DPS.

19. The method as defined in claim 13 wherein the predicted value associated with the target is computed from a model for the DPS.

20 20. A calibration system for a document processing system (DPS) comprising:

an output of the DPS generated from a calibration target including a selected sequence of target elements, wherein the output includes a corresponding sequence of output elements to the target elements;

25 a controller including a sensor for sensing a characteristic of the output elements for computing a calibrating function between the output and the calibration target based upon a comparison of target elements and corresponding output elements, and wherein the controller includes an error identifier indicating a mismatch between the selected sequence of target elements and corresponding sequence of output elements attributable to a mis-ordering of the sensing of the output elements relative to the selected sequence of target elements for the comparison; and,

30 an adjuster for re-ordering the output for the comparison whereby the computing is based on a correct sequencing of the output elements and the target elements.

21. The system as claimed in claim 20 wherein the adjuster comprises a visual display of alternative sequencing orders of the output to match the calibration target, and wherein a user selects one of the alternative sequencing orders  
5 for validating the comparison.

22. The system as claimed in claim 20 wherein the adjuster comprises a computation of a minimal error value for the computing of the calibrating function indicative of a correct sequencing between the output elements and the target  
10 elements.

23. A method of calibrating a DPS from a predetermined target to expedite computing a calibrating function for the DPS from a DPS output based on the target, comprising the steps of:  
15 providing the target to the DPS and associating the target with a corresponding measuring process;  
generating an output from the DPS;  
disposing the output to be measured in a selective position in a measuring device for the computing of the calibrating function;  
20 providing to a user of the DPS, a representation of the corresponding measuring process including a desired position of the output for the measuring;  
validating by the user of the selected position relative to the representation;  
measuring the output relative to the target; and,  
25 computing the calibrating function from the measuring.

24. The method as defined in claim 23 wherein the providing the representation of the corresponding measuring process includes imaging for the user the selective position of the disposed output that provides measurements in a correct  
30 order with respect to the DPS calibration process.

25. The method as defined in claim 23 further including repositioning the output in response to the providing of the representation of the

measuring process whereby the redisposing matches the output to the corresponding measuring process.

26. The method as described in claim 23 wherein the representation  
5 of the measuring process provided to the user is a visual image presented on a display derived from a prior characterization of the DPS.

27. The method as described in claim 23 wherein the representation  
10 of the measuring process provided to the user is a visual image presented on a display derived from a model of the DPS.

28. The method as described in claim 23 wherein the providing the  
15 representation further includes providing control commands for the measuring of the output, and wherein the providings of the representation and control commands are associated in a control file for concurrent execution with the generating of the output.

29. A method of calibrating a DPS from a predetermined target to  
expedite computing a calibrating function for the DPS from a DPS output based on  
the target, comprising the steps of:  
20 generating an output from the DPS having a plurality of patches  
corresponding to the target;  
providing to a measuring device, predicted measurement values for  
each patch on the output;  
providing to a user of the DPS, a visual representation corresponding  
25 to at least one control file available at the measuring device for measuring the output;  
selection by the user of a control file for which the visual  
representation matches the output;  
disposing the output in the measuring device to match the visual  
representation;  
30 measuring the output with the selected control file; and,  
computing the calibrating function from the measuring.

5

10

the providing predicted measurement values further comprises sending target layout information from the DPS to the measuring device; and,

15